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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,275	03/08/2001	Paola Belloni	P01,0108	6581

26574 7590 02/14/2002

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EXAMINER

PAYNE, SHARON E

ART UNIT PAPER NUMBER

2881

DATE MAILED: 02/14/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/802,275

Applicant(s)

BELLONI ET AL.

Examiner

Sharon E. Payne

Art Unit

2881

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the cap reflector (claim 2), the partially light-transmissive cap reflector (claim 4), the second cap reflector with different reflection properties (claim 5), the input reflector of the second light directing part of the light past the light guide (claim 9), the spacer elements (claim 13), the component partially filling the predetermined surface (claim 16), and the plates partially filling the predetermined area (claim 17) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 16 is objected to because of the following informalities: The word "fo" in line 8 should probably be "for." Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2881

Claim 1 is indefinite for reciting the limitation "a boundary surface between two media with a different refractive index" in line 5. Which component has the different refractive index, the two media or the boundary surface?

Claim 1 is indefinite for reciting the limitation "optically effective element" in lines 9 and 11. What is meant by the phrase "optically effective"?

Claim 4 is indefinite for reciting the limitation "a standard dimension" in line 5. What standard is being used?

Claim 5 is indefinite for reciting the limitation "standard dimensions" in line 3. What standard is being used?

Claim 8 recites the limitation "the input reflector" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim 8 is indefinite for reciting the limitation "the input reflector of a first light is different from an input reflector of a second light" in lines 1 and 2. How is the first input reflector different? Are the sizes of the reflectors different? Is one reflector a partial reflector?

Claim 9 is indefinite for reciting the limitation "for output as an indirect light part" in line 3. What is meant by "indirect light part"?

Claim 10 is indefinite for reciting the limitation "optically effective components" in line 2. What is meant by "optically effective"?

Claim 11 is indefinite for reciting the limitation "that deflects light in a direct fashion" in line 5. What is meant by "in a direct fashion"?

Claim 11 is indefinite for reciting the limitation "the same basic shape" in lines 5-6. What is meant by "basic shape"?

Claim 11 is indefinite for reciting the limitation "the same relevant dimensions" in line 6. What is meant by the word "relevant"?

Art Unit: 2881

Claim 11 is indefinite for reciting the limitation "as a corresponding element of all other lights of the group" in lines 6-7. What is meant by "corresponding element"?

Claim 12 is indefinite for reciting the limitation "the same basic shape" in line 2. What is meant by the word "basic"?

Claim 14 is indefinite for reciting the limitation "a boundary surface between two media with a different refractive index" in lines 2-3. Which component has the different refractive index, the boundary surface or the two media?

Claim 16 is indefinite for reciting the limitation "at least one boundary surface between two media with a different refractive index" in lines 3-4. Which component has the different refractive index, the boundary surface or the two media?

Claim 16 recites the limitation "the light intensity distribution curve" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 is indefinite for reciting the limitation "optically effective component parts" in line 9. What is meant by "optically effective"?

Claim 16 recites the limitation "the predetermined surface" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 is indefinite for reciting the limitation "arranging the component so that the predetermined surface is completely filled with the component except for a region whose dimensions are smaller than the dimensions of the component" in lines 11-13. What is meant by this phrase?

Claim 17 recites the limitation "the predetermined area" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 is indefinite for reciting the limitation "the light exit face is completely filled" in line 5. What is being used to fill the light exit face?

Art Unit: 2881

Claim 17 is indefinite for reciting the limitation "limit the cavity of the hollow light guide" in line 8. What is meant by "limit the cavity"?

Claim 17 recites the limitation "the cavity" in line 8. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 recites the limitation "the hollow light waveguide" in line 7. There is insufficient antecedent basis for this limitation in the claim.

Claim 17 is indefinite for reciting the limitation "arranging the at least one plate so that the predetermined area that corresponds to the light exit face is completely filled or filled except for a region whose dimensions are smaller than the dimensions of the plates" in lines 4-6. What is meant by this phrase?

Claim 18 is indefinite for reciting the limitation "generating a shielding" in line 2. What is meant by "generating a shielding"?

Claims 2, 3, 6, 7, 13 and 15 are necessarily included because of their dependency.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

Art Unit: 2881

the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-5, 8-10 and 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dreyer (U.S. Patent 5,692,822).

Regarding claim 1 (as best understood), Dreyer discloses a line light source. The light source includes a plurality of lights (reference numbers 20, 20'), each light having at least one hollow light guide with a cavity into which light from at least one lamp is directed (reference number 14), at least one light output device comprising at least one light permeable element having a boundary surface between two media with a different refractive index (reference numbers 12 and 14, Fig. 13), said boundary surface being provided with a light-refractive structure (reference numbers 12 and 14, Fig. 13), each light having a supporting structure on which at least one optically effective element (reference numbers 22 and 22') sits (Fig. 13), each optically effective element being a prefabricated component having fixed dimensions (reference numbers 22 and 22').

Dreyer does not show the plurality of lights having different light emission properties. Using lights that have different light emission properties is considered to be an obvious variation in design. See Hooker et al. (U.S. Patent 5,477,422) in the abstract. Since using lights that have different light emission properties is well known in the art, it would have been obvious to one skilled in the art to use such lights in the Dreyer reference for providing illumination.

Regarding claim 2 (as best understood), Dreyer discloses each light having a cap reflector (reference numbers 22 and 22') and a light refractive structure (reference numbers 12 and 14) that are prefabricated components of a fixed dimension so that they can be attached and installed in each support structure (Fig. 13).

Art Unit: 2881

Concerning claim 3 (as best understood), Dreyer discloses each light of the system having the same dimensions in the support structure for receiving the cap reflector (support for reference numbers 22 and 22') and the element of the light output device (Fig. 13).

Regarding claim 4 (as best understood), Dreyer discloses one first light having an exclusive reflector cap (reference number 22) and the use of partially light-transmissive reflectors (abstract). Dreyer does not disclose the partially light-transmissive reflector being made into a cap reflector and the use of standard sizes for reflectors.

Using a partially light-transmissive reflector material and standard sizes for a cap reflector is considered to be an obvious variation in design. Since partially light-transmissive reflectors and standard dimensions are well known in the art, it would have been obvious to one skilled in the art to make both cap reflectors in a standard size and to make one cap reflector out of partially light-transmissive material in the Dreyer reference for reflecting light from the source.

Concerning claim 5 (as best understood), Dreyer discloses a first and second light (reference numbers 20 and 20'), each light having a cap reflector (reference numbers 22 and 22'). Dreyer does not disclose the cap reflectors having different reflection properties and standard dimensions.

Using cap reflectors that have different reflection properties and standard dimensions are considered to be obvious variations in design. See Dreyer's abstract for the use of partially reflective material. Since partial reflectors and standard dimensions are well known in the art, it would have been obvious to one skilled in the art to use a partial reflector having standard dimensions in the Dreyer reference for reflecting the light from the light source.

Regarding claim 8 (as best understood), Dreyer discloses a first and second light (reference numbers 20 and 20'), each light having a cap reflector (reference numbers 22 and

Art Unit: 2881

22') that is interchangeable with the other (Fig. 13). Dreyer does not disclose the cap reflectors having different properties.

Using cap reflectors that have different properties is considered to be an obvious variation in design. See Dreyer's abstract for the use of partially reflective material, which can be used to make one reflector different from another. Since different reflectors are well known in the art, it would have been obvious to one skilled in the art to use a different reflector in the Dreyer reference for reflecting the light from the light source.

Regarding claim 9, Dreyer discloses the first light (reference number 20) completely reflecting light into the hollow light guide (reference number 14). Dreyer does not disclose the input reflector of the second light directing part of the light to bypass the hollow light guide.

Having the reflector directing part of the light to bypass the light guide is considered to be an obvious variation in design. See Nagatani et al. (U.S. Patent 5,863,114) in Fig. 2. Since using the reflector to direct light is well known in the art, it would have been obvious to one skilled in the art to redirect the light in the Dreyer reference.

Concerning claim 10 (as best understood), Dreyer discloses the plurality of lights having the same support structure (Fig. 13). Dreyer does not disclose at least one of the optically effective components having the same dimensions relative to installation but exhibiting different light oriented properties.

Using an optically effective component, which is assumed to be a reflector, that has the same dimensions relative to installation but different optical properties is considered to be an obvious variation in design. See Dreyer's abstract for the use of partially reflective material, which can be used to make an optically different cap reflector. Since reflectors having the same dimensions relative to installation and different optical properties are well known in the art, it

Art Unit: 2881

would have been obvious to one skilled in the art to use such a reflector in the Dreyer reference for reflecting light from a light source.

Regarding claim 14 (as best understood), Dreyer discloses a light output device having at least one light-transmissive element having a boundary surface between two media (reference numbers 12 and 14) with a different refractive index that is provided with a light-refracting structure that essentially prevents a light emission above a limited angle relative to the perpendicular *vis a vis* the light exit face in at least one plane perpendicular to the light exit surface (Fig. 13).

Concerning claim 15, Dreyer discloses the lights being arranged outside the hollow light guide (reference number 14) and coupling light into the hollow light guide from the outside (Fig. 13).

7. Claims 1-3 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. (U.S. Patent 5,704,703).

Regarding claim 1 (as best understood), Yamada et al. discloses a lighting device. The lighting device includes a plurality of lights (reference number 105), each light having at least one hollow light guide with a cavity into which light from at least one lamp is directed (reference number 106), at least one light output device comprising at least one light permeable element having a boundary surface between two media with a different refractive index (reference numbers 110 and 102, Fig. 18), said boundary surface being provided with a light-refractive structure (reference numbers 110 and 102, Fig. 18), each light having a supporting structure on which at least one optically effective element (reference number 108) sits (Fig. 18), each optically effective element being a prefabricated component having fixed dimensions (reference number 108).

Yamada et al. does not show the plurality of lights having different light emission

Art Unit: 2881

properties. Using lights that have different light emission properties is considered to be an obvious variation in design. See Hooker et al. (U.S. Patent 5,477,422) in the abstract. Since using lights that have different light emission properties is well known in the art, it would have been obvious to one skilled in the art to use such lights in the Dreyer reference for providing illumination.

Regarding claim 2 (as best understood), Yamada et al. discloses each light having a cap reflector (reference number 108) and a light refractive structure (reference numbers 102 and 110) that are prefabricated components of a fixed dimension so that they can be attached and installed in each support structure (Fig. 18).

Concerning claim 3 (as best understood), Yamada et al. discloses each light of the system having the same dimensions in the support structure for receiving the cap reflector (support for reference number 108) and the element of the light output device (reference numbers 102 and 110).

Regarding claim 16 (as best understood), Yamada et al. discloses providing an optically effective component having a predetermined dimension (reference number 108) and fastening the component to the support structure (Fig. 18). Leaving part of a predetermined surface open that is smaller than the dimension of the component is not disclosed by Yamada et al. Leaving part of a predetermined surface open is considered to be an obvious variation in design.

Concerning claim 17 (as best understood), Yamada et al. discloses providing at least one light-transmissive plate having a light-refractive structure producing a shielding at the base area (reference number 110), arranging the plate so that the exit face is completely filled (Fig. 18) and fastening the plates in an opening of the housing of the hollow light guide so that the plate entirely limits the cavity of the hollow light guide (Fig. 18).

Art Unit: 2881

Regarding claim 18, Yamada et al. discloses providing a plurality of plates having a light-refracting structure generating a shielding being arranged next to one another (reference numbers 110 and 102), at least two of the plates having the same shape and same dimensions (Fig. 18).

8. Claims 6-7 and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al. in view of Franck et al. (U.S. Patent 3,150,833).

Regarding claim 6, Yamada et al. discloses or implies all of the elements of claim 1 as discussed above. Yamada et al. also discloses two different lights (reference number 105). Yamada et al. does not disclose a different refractive structure for each light.

Franck et al. discloses each light having at least one planar element in the respective light output device having the light-refractive structure of the component part of the light output device (Fig. 15), the parts being dimensioned so that they can be introduced in the support structure of each of the first and second lights (Fig. 18) so that the planar elements of the first light comprise a different light-refractive structure than the planar elements of the second light (Fig. 16).

It would have been obvious to one skilled in the art to use the planar elements of Franck et al. in the Yamada et al. apparatus for refracting the light, since the refractive elements are well known in the art. Further, Yamada et al. teaches the use of refractive elements.

Concerning claim 7, Franck et al. discloses the planar elements of each light having the same length and width (Fig. 2).

Regarding claim 11, Yamada et al. discloses or implies all of the elements of claim 1 as discussed above. Yamada does not disclose the elements of claim 11.

Franck et al. discloses the light output face being different for at least two different lights of the group (Fig. 16), and the light output device for at least a part of the lights of the group

Art Unit: 2881

comprising planar elements arranged side by side that are respectively provided with a light-refractive structure that deflects light in a direct fashion (Fig. 16), and at least one planar element having the same basic shape and the same relevant dimensions for all lights of this group as a corresponding element of all of the other lights of the group (Fig. 15).

Concerning claim 12, Franck et al. discloses the planar element having the same basic shape and the same dimensions as the planar elements of a different light in the group (Fig. 15).

Regarding claim 13, Franck et al. discloses the planar elements being separated from one another and from the housing of the hollow light guide by a plurality of spacer elements which have different dimensions (reference number 76).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Iwamoto et al. discloses an illuminator and display panel employing the illuminator.

Dreyer, Jr. discloses a direction dependent line light source.

Grove discloses a lighted display panel system.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (703) 308-2125. The examiner can normally be reached on regular business hours.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Sandra O'Shea
Supervisory Patent Examiner
Technology Center 2800

Application/Control Number: 09/802,275

Page 13

Art Unit: 2881

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February 8, 2002